DETAILED ACTION

The Examiner acknowledges the amendment filed on August 11, 2009, wherein claims 3, 17, 21-25, and 27-33 are pending.

Response to Arguments

Applicant's arguments with respect to claims 3, 17, 21-25, and 27-33 have been considered but are moot in view of the new ground(s) of rejection.

Note to Applicant Regarding Claim Interpretation

The terms "for" and "configured to" in the claims may be interpreted as intended use. Intended use/functional language does not require that reference specifically teach the intended use of the element. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3, 17, 21-22, 24-25, and 27-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Faisandier US Patent Number 5,669,393 (Note the claims are ordered by their dependency not numerical order).

3. A method of communicating with a medical device, including an analog/digital interface having contacts to which either an analog sensor plug or a digital external device plug can be connected (Fig. 1 interface 26 having contacts for both analog and digital devices as described in column 1 lines 37-49 and 56-63, and column 3 lines 43-63), the method comprising:

operating the analog/digital interface in a measurement mode when the analog sensor plug is connected and in a communication mode when the external device plug is connected (column 2 lines 15-40, column 3 lines 64-67, and column 6 line 63 to column 7 line 7; the interface operates to receive an analog sensor signal or digital communication data);

changing over between the measurement mode and the communication mode automatically depending on whether the analog sensor plug or the external device plug is connected to the analog/digital interface (column 4 line 40 to column 5 line 6 indicating automatic recognition of whether an analog input or digital input is attached);

in the communication mode, digitally transmitting a software update from the connected external device into the medical device via the analog/digital interface and digitally transmitting stored digital measurement data from the medical device to the external device via the analog/digital interface (column 3 lines 64 to column 4 line 5 and column 6 line 63 to column 7 line 7 indicating bidirectional digital programming and data management); and

in the measurement mode, transmitting analog signals from the connected sensor into the medical device via the analog/digital interface (Fig. 2 and column 4 lines 23-33; analog signals are being transmitted from sensor 30 to medical device 10 via connector 26).

21. The method as claimed in claim 3, further including:

measuring electrical parameters of received digital and analog signals received by the analog/digital interface and switching between the measurement mode and the communication mode in response to the measured electrical parameters of the received signals (column 4 line 40 to column 5 line 6; automatic recognition is based on complexity of the voltage signal being received by the medical device).

22. The method as claimed in claim 21, wherein detecting the electrical parameters includes analyzing the received signals to determine whether the received signals are digital and changing over to the communication mode in response to the received signals being digital (column 4 line 40 to column 5 line 6; automatic recognition is based on complexity of the voltage signal being received by the medical device).

17. A medical device which receives analog data from an analog sensor in a measurement mode and communicates digitally with a digital external device in a communication mode, the medical device comprising:

a set of contacts, the contacts being *configured to* receive (1) an analog sensor plug connected by a lead to the analog sensor, and (2) a digital device plug connected by a lead with the digital external device, the contacts being configured such that the contacts can only connect with one of the analog sensor plug and the digital external device plug at a time (Fig. 1 interface 26 as described in column 1 lines 37-49 and 56-63, and column 3 lines 43-63); and

a switch which assumes one state in response to receiving the analog sensor plug and another state in response to receiving the digital external device plug (column 4 line 40 to

column 5 line 6 indicating automatic recognition of whether an analog input or digital input is attached).

24. The medical device as claimed in claim 17, further including:

a processor programmed to implement a software routine to detect digital data (column 4 line 40 to column 5 line 6).

31. The medical device as claimed in claim 17, further including:

a processor programmed to (1) analyze signals received from the plug connected with the contacts to determine if signals received at the contacts are analog or digital and (2) operate the switch in accordance with the determination (column 4 line 40 to column 5 line 6 indicating voltage recognition to determine analog or digital processing).

32. The medical device as claimed in claim 17, further including:

an operating mode circuit that monitors and evaluates signals received from the plug connected to the contacts to determine electrical parameters of the received signal at the contacts to determine whether the received signal is analog or digital (column 4 line 40 to column 5 line 6 indicating voltage recognition to determine analog or digital processing).

25. A system for communicating with a medical device, the system comprising:

at least one sensor which senses bodily functions of a patient and transmits analog electrical sensor signals, the sensor being connected with a sensor plug (Figs. 2 and 3 wherein

the medical device 10 is connected to physiological sensors as described in column 3 lines 20-35 and column 4 lines 23-32);

an external digital device which digitally transmits digital software update signals from the external device to the medical device and digitally receives data from the medical device via an external digital device plug (column 6 line 63 to column 7 line 7 indicating an external system with both input and outputs connected to the medical device); and

the medical device including an interface (Fig. 1 interface 26) which receives the analog sensor signals and which transmits and receives digital software update signals to and from the digital external device, the interface comprising:

a set of contacts which connect with both the analog sensor plug and the external digital device plug one at a time (Fig. 1 interface 26 column 4 lines 6-17);

a processor programmed to detect whether the digital software update signals are being transmitted via the interface, automatically change from an analog measurement mode to a digital communication mode in response to detecting the digital software update signals (Fig. 1 processing circuit 20 as described in column 3 lines 20-36 and column 3 line 51 to column 4 line 5);

such that in the measurement mode (Fig. 2 and column 4 lines 23-33; analog signals are being transmitted from sensor 30 to medical device 10 via connector 26), analog sensor signals are transmitted from a sensor into the medical device and in the communications mode, the digital software update signals are transmitted from the external device (column 3 lines 64 to column 4 line 5 and column 6 line 63 to column 7 line 7 indicating bidirectional digital programming and data management).

27. The system as claimed in claim 25, further including:

a switch controlled by the processor to switch the interface between the measurement mode and the communications mode (column 4 line 40 to column 5 line 6).

33. The system as claimed in claim 25, wherein the processor is further programmed to:

analyze the digital software update signals to determine whether the received signals are digital and the analog sensor signals to determine whether the received signals are analog (column 4 line 40 to column 5 line 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Faisandier US Patent Number 5,669,393 as applied to claim 3 above.

Faisandier discloses the limitations of claim 3 and further discloses that the interface is capable of being built on a single integrated hybrid chip separately connectable via plugs 14 to the recording structure of a physiological recording device (Faisandier column 2 lines 41-51 and column 3 lines 7-43). Faisandier does not disclose replacing an interface of an existing medical device which is unable to communicate digitally with the digital external device with the

analog/digital interface in order to provide digital communication between the existing medical device and the digital external device.

However it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the interface of an existing medical device comprising of only analog contacts because Faisandier teaches the use of a mixed analog/digital interface reduces the complexity and internal cabling modification required to accommodate both types of interfaces in a single device for communication to both supplementary analog sensors and digital external systems (Faisandier column 1 lines 36-63).

Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faisandier US Patent Number 5,669,393 as applied to claims 3 and 17 above in view of Stivoric et al. US Patent Application 2004/0039254 (hereinafter referred to as Stivoric).

Faisandier discloses the limitations of claims 3 and 17, using a form of electrical switching to automatically switch between analog and digital connections via using a processor to recognize voltage signal values (Faisandier column 4 line 40 to column 5 line 13). Faisandier does not disclose using a switching method that determines physical properties, a mechanical form of switching, or magnetic switching as claimed in claims 28-30.

However Stivoric, a reference in an analogous art, discloses an interface between a medical sensor device (Figs. 30-34 housing 805) and an external sensing device, or "flexible section" 810 of Fig. 31 and 33, capable of programming the medical sensor device 805 with operational settings, provide additional data management capabilities, or supplement with additional sensor capabilities (Stivoric paragraphs [0149] – [0151] and [0163] – [0164]).

Stivoric teaches the use of without limitation electronic switches, magnetic switches, optical switches, and switch activators to interface between medical sensor device 805 and external device 810.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the use of electronic switching as disclosed in Faisandier with magnetic switching, mechanical switching, or switch activators, because Stivoric teaches them as substitutable alternatives for interfacing a medical sensor "smart" device with an external device comprising of either analog or digital connections (Stivoric paragraphs [0149] – [0151] and [0163] – [0164]).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bobby Soriano whose telephone number is (571)270-7030. The examiner can normally be reached on Monday thru Friday, 10:30am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Johnson III can be reached on 571-272-4768. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bobby Soriano/
Examiner, Art Unit 3769

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